

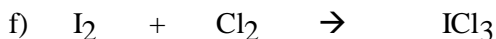
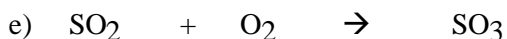
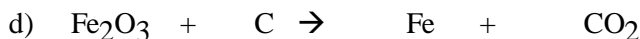
Chemistry 130
Chemical Reaction Practice

1) Balance the following equations.

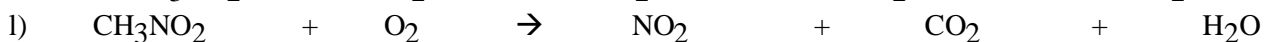


b) The combustion reaction for butanol ($\text{C}_4\text{H}_9\text{OH}$)

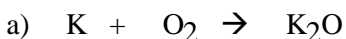
c) The combustion reaction for acetylene (C_2H_2)



g) The combustion reaction for ether, $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$



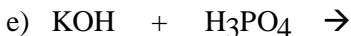
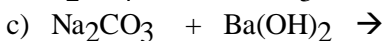
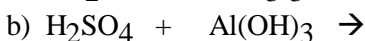
2) Balance the following synthesis reactions:



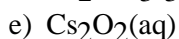
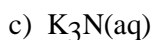
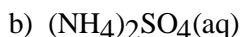
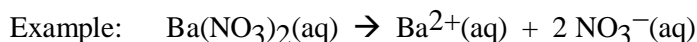
3) Balance the following single replacement reactions:

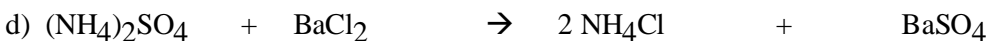
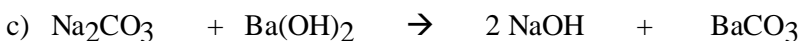
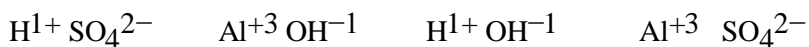
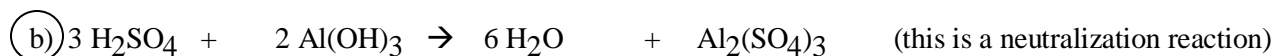


4) Complete and balance the following double replacement reactions. Put a circle around the letter of each reaction that classifies as a neutralization reaction.

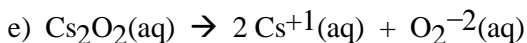
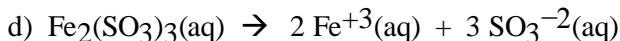
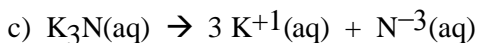
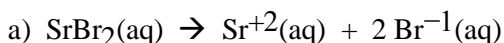


5) For each of the following, write a balanced equation showing the ions produced by dissociation.



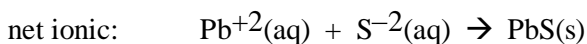
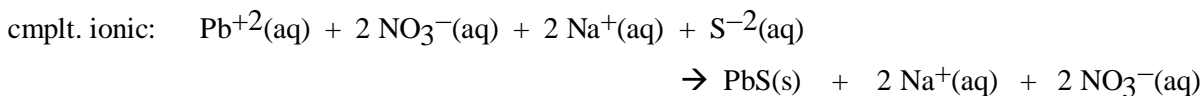


5) For each of the following, write a balanced equation showing the ions produced by dissociation.

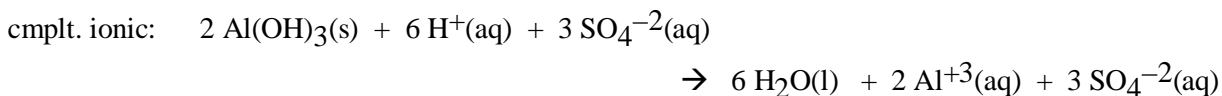


6) Write the molecular, complete ionic, and net ionic equations for the following reactions in aqueous solution. Use the solubility guidelines to tell what reactants and products are insoluble.

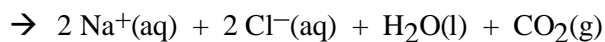
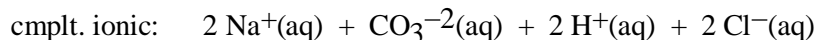
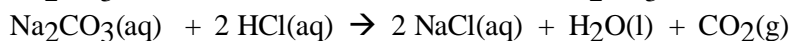
a) $\text{Pb}(\text{NO}_3)_2$ and Na_2S



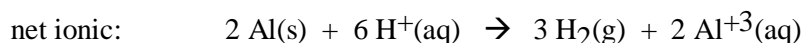
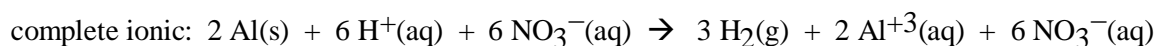
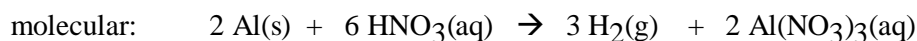
b) $\text{Al}(\text{OH})_3$ and H_2SO_4 (Note: when water forms, it forms as $\text{H}_2\text{O}(\text{l})$)



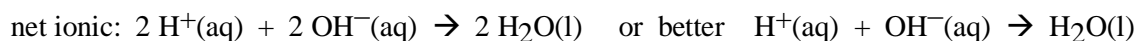
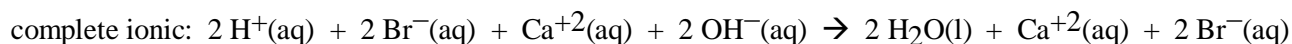
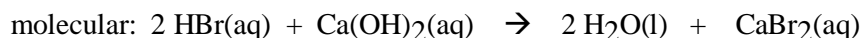
c) Na_2CO_3 and HCl (hint: one of the products decomposes – you should know which one)



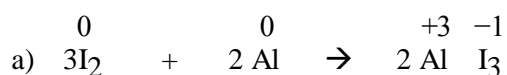
d) $\text{Al} + \text{HNO}_3$



e) $\text{HBr} + \text{Ca}(\text{OH})_2$ (HBr is a strong acid; in this example, assume $\text{Ca}(\text{OH})_2$ is aqueous, i.e. soluble)

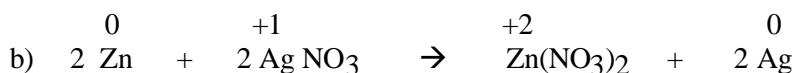


7) For each of the following reactions, tell which element was oxidized and which was reduced. Justify your answer in terms of charges.



Al went from 0 to +3, so Al was oxidized and Al is the reducing agent.

I went from 0 to -1, so I was reduced and I_2 is the oxidizing agent



Ag went from +1 to 0, so Ag was reduced and AgNO_3 is the oxidizing agent.

Zn went from 0 to +2, so Zn was oxidized and Zn is the reducing agent